

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
MISSOURI PACIFIC RAILROAD NEAR KNOXVILLE, ARK., ON
OCTOBER 23, 1928.

January 7, 1929.

To the Commission:

On October 23, 1928, there was a head-end collision between a passenger train and a freight train on the Missouri Pacific Railroad near Knoxville, Ark., which resulted in the death of one employee and the injury of two passengers and eight employees.

Location and method of operation.

This accident occurred on the Van Buren District of the Central Division which extends between Van Buren Yard and North Little Rock, Ark., a distance of 153.07 miles; this is a single-track line over which trains are operated by time-table, train orders and a manual block-signal system. The accident occurred 2,521 feet north of the north passing-track switch at Knoxville; approaching this point from the south, beginning at the south passing-track switch, the track is tangent for a distance of 6,588.3 feet, followed by a $0^{\circ} 57'$ curve to the left 2,516.7 feet in length, the accident occurring on this curve at a point 942.7 feet from its southern end. Approaching from the north there is a $4^{\circ} 02'$ curve to the left 1,675.7 feet in length, then tangent for a distance of 106 feet, followed by the curve on which the accident occurred. The grade is generally ascending for northbound trains, being 0.42 per cent at the point of accident. The accident occurred in a cut, the maximum depth of which is 15 feet, and there is some shrubbery on the inside of the curve, approaching the point of accident, the range of vision is restricted to approximately 875 feet from the engineman's side of a southbound train and to about 200 feet from the engineman's side of a northbound train.

The passing track at Knoxville is 5,010 feet in length and parallels the main track on the west. A State highway is also located west of the right-of-way and parallels the main track for a considerable distance, while there is a public crossing at grade located 339 feet south of the north passing-track switch. The west approach to this crossing leads off the highway from the north in a gradual curve and branches off the highway from the south at a point about 200 feet south of the crossing, then parallels the highway until it intersects the north approach at the railroad tracks.

The weather was clear and it was dark at the time of the accident, which occurred at about 6.20 p.m.

Description

Northbound freight train No. 168 consisted of 58 cars and a caboose, hauled by engine 1708, and was in charge of Conductor Austin and Engineman Graham. At Russellville, 15.77 miles south of Knoxville and the last open office, the crew received a permissive card and a copy of train order No. 81, Form 19, directing them to meet train No. 143 at Knoxville, train No. 168 to hold the main track. This train departed from Russellville at 5.41 p.m., 2 hours and 41 minutes late, passed the siding at Knoxville without stopping and collided with train No. 143 while traveling at a speed estimated to have been between 10 and 15 miles per hour.

Southbound passenger train No. 143 consisted of gas-electric motor 654, of steel construction, and was in charge of Conductor Milliken and Engineman Dean. The crew received a permissive card and train order No. 81, Form 19, previously mentioned at Knoxville Junction, 2.31 miles north of Knoxville, and departed from that point at 6.15 p.m., 5 minutes late, and collided with train No. 168 while traveling at a speed estimated at between 5 and 10 miles per hour.

The impact of the collision drove motor 654 backward a distance of 162 feet, lifted the body of that car from its trucks and otherwise considerably damaged it, the front end of engine 1708 was also badly damaged. The employee killed was the baggageman of train No. 143.

Summary of evidence

Engineman Dean, of train No. 143, stated that he received an order at Knoxville Junction to meet train No. 168 at Knoxville, his train being required to take the siding. The headlight of his train was burning. Approaching the curve on which the accident occurred, he sounded station and meeting-point whistle signals and as the train entered the curve he saw the reflection of a headlight shining on the rails; at that time he thought it was caused by train No. 168 standing at Knoxville. Upon reaching a point a little farther around the curve and while his train was drifting at a speed of 35 to 37 miles per hour, the headlight came into view at a distance which he estimated at about 5 or 6 telegraph-pole lengths. Realizing that the opposing train was then north of the north passing-track switch, he immediately applied the brakes in emergency and prepared to get off; the brakes took proper effect and the speed was reduced to between 5 and 7 miles per hour at the time of the accident.

Conductor Milliken, of train No. 143, who was riding in the forward end of the car as it approached the point of accident, practically corroborated the statements of Engineman Dean except that he estimated the speed of his train at the time of the accident at about 8 or 10 miles per hour.

Engineman Graham, of train No. 168, stated that at Russellville he received from his conductor a train order, among others, requiring his train to hold the main track and meet train No. 143 at Knoxville. He also received a permissive card pertaining to the meeting point. He read the orders back to the conductor and then handed them to his fireman who also read them but not audibly although the fireman mentioned their contents to him afterwards; there was no conversation held regarding the orders after departing from Russellville. He did not show the orders to the head brakeman as he was riding in the brakeman's cab on the engine tender and did not enter the engine cab after departing from Russellville. Engineman Graham said he thought of the meet at one point en route, but before reaching Knoxville the fireman permitted the water to get too high in the boiler and as he had to instruct the fireman how to remedy this condition as well as watch the water level and raise the steam pressure which had fallen considerably due to the fireman having shut off the stoker, he overlooked the meet order and his first intimation that he had passed the meeting-point was when he saw the headlight of the opposing train around the curve about 200 feet distant; he did not sound a meeting-point whistle signal approaching Knoxville. He said his view was restricted on account of his position on the outside of the curve while the fireman had just returned to his seatbox after shoveling coal into the firebox. Engineman Graham estimated the speed of his train at the time train No. 143 came into view at 15 miles per hour; he immediately shut off steam and applied the brakes in emergency which reduced the speed to about 12 miles per hour at the time of the accident. He further stated that he had received similar meet orders; that is, to meet at this point and to hold the main track, on a number of previous occasions. He had frequently met train No. 143, with motor 654, on the siding at Knoxville with its headlight extinguished, but in no instance did he mistake its cab light for that of an automobile.

Fireman Cole, of train No. 168, stated that he read the orders received at Russellville and in addition the engineman called his attention to the meet with train No. 143. After leaving that point he permitted too much water to get into the boiler and as a result the engineman instructed him to shut off the injector and the stoker to allow the water level to lower, he did not use the blow-off

cock for this purpose. Upon reaching a point about 3 miles south of Knoxville, it became necessary to shovel coal in order to build up the fire in which duty, in addition to adjusting the stoker, he was engaged until only a few seconds prior to the accident; he then returned to his seat-box and upon looking forward he observed the opposing train only about 25 or 30 feet ahead. He immediately jumped from the engine, which was still working steam, without calling the engineman's attention to the impending danger. He did not know when his train passed Knoxville on account of his being on the engine deck as well as not being familiar with the road in that vicinity. He also said that he remembered the meet at the time he got down to shovel coal, but as no whistle signal was sounded approaching Knoxville, and as he was having difficulty in operating the stoker, he forgot about train No. 143 until he saw it approaching just before the occurrence of the accident.

Head Brakeman Cox, of train No. 168, stated that he did not see the train orders received at Russellville although the conductor told him that they were to meet train No. 143 at Knoxville; he did not ask either the conductor or engineman to see the orders. Between Russellville and Knoxville while riding in the cabin on the engine tender he had in mind the meet order, but forgot at just what point it was effective, and as there was no meeting-point whistle signal sounded approaching Knoxville it led him to believe that they were to meet the opposing train at some other point. He did not know whether the brakes were applied prior to the accident and estimated the speed at the time of its occurrence at 10 or 12 miles per hour.

Middle Brakeman Russell, of train No. 168, stated that he did not read the orders received at Russellville nor was he informed as to their contents. When the train was ready to depart he coupled up at a crossing and boarded it at about the 35th car from the engine, then started toward the head end, reaching the engine just before the train arrived at Knoxville and entered the brakeman's cabin where he remained until after the accident. He estimated the speed at the time of the accident at 15 miles per hour. Brakeman Russell further stated that he was aware the rules required that brakeman must read the train orders and keep them in mind out he had no opportunity of reading them while at Russellville. Upon reaching the head end of the train, he did not go up to the engine cab, nor did he make any inquiry of Brakeman Cox while riding in the brakeman's cabin as to the meeting-point with train No. 143 although he was familiar with the schedule of that train and knew it was about due at Knoxville; he thought it would probably be met at Knoxville Junction.

Conductor Austin, of train No. 168, stated that after receiving the train orders at Russellville he delivered a copy of them to the engineman, who read them back, and at the same time he called the engineman's attention to meeting train No. 143 at Knoxville. He did not show the orders to either the head or middle brakeman but informed the head brakeman as to the contents of order No. 81; he had no opportunity to advise the middle brakeman as he was located at a crossing some distance away. He then went to the caboose and handed the orders to the flagman, who also read them aloud. He did not hear any whistle signals sounded approaching Knoxville although they may have been sounded and he did not hear them due considerable noise being made by the caboose which appeared to have a flat wheel. When the caboose reached a point about 15 or 20 car-lengths from the north passing-track switch and while seated at his desk, he inquired of the flagman if he could see train No. 143, the flagman replied that he did not think so. Conductor Austin said he then looked out a side window and noticed a light which he thought at the time was the dimmed headlight of train No. 143 standing on the siding, but which proved to be an automobile with one head-light burning standing at the highway crossing south of the passing-track switch. As soon as he realized his mistake he instructed the flagman to apply the brakes in emergency, the flagman complying with the request, he did not think the brakes were applied from the engine. At the time of the brake application the train was traveling 10 or 12 miles per hour and moved only 6 or 8 car-lengths until it came to a stop with the caboose approximately 60 feet north of the switch. He then instructed the flagman to give a back-up signal, but as no action was taken from this signal he got off and started forward. He felt no sudden jolt or lurch as the train came to a stop and did not know that a collision had occurred until he reached a point near the head end.

Brakeman Atkins, of train No. 168, stated that before departing from Russellville he read and understood the orders received at that point, and in addition the conductor remarked that they were to meet train No. 143 at Knoxville. He was riding on the left side in the cabola of the caboose as the train approached Knoxville running at a speed of about 15 or 18 miles per hour and when the caboose reached a point near the station he observed a light which appeared to be about into clear on the north end of the passing track. He informed the conductor, who was working with his reports, that he could see a light, but did not know whether it was train No. 143, whereupon the conductor put his head out a side window and looked forward, it was not discovered that it was not the opposing train until the caboose reached a point approximately 50 feet from the highway crossing; the light that he had seen was a head-light of an automobile headed south and which was standing on the passing track at the crossing. The conductor then told him to set the brakes which he did by opening the

brake valve slowly as it was hard to operate and he was trying to avoid breaking the train in two. He did not get the valve entirely open before the train came to a stop with the caboose about 2 rail-lengths north of the crossing. He felt no shock and did not learn until later that a collision had occurred. He said that he did not know whether any whistle signals were sounded approaching Knoxville as in some cases such signals could be heard but in others they could not on account of the noise made by the train. Brakeman Atkins further stated that although the head light of a motor car such as the one involved in the accident is higher and shines brighter than a headlight of an automobile, motor cars are equipped with other lights - for instance, pilot lights, that would resemble a dimmed automobile headlight and which could cause anyone to become confused.

Conclusions

This accident was caused by failure to obey a meet order, for which Engineman Graham and Conductor Austin of train No. 168, are primarily responsible.

Under the requirements of train order No. 81 train No. 168 was to hold the main track and meet train No. 143 at Knoxville. Engineman Graham said he had the meet order in mind en route before arriving at Knoxville, but because of trouble with the fire and steam he forgot about meeting train No. 143 until he observed it approaching around the curve on which the accident occurred. He immediately shut off steam and applied the brakes in emergency but due to the short distance speed was only reduced slightly prior to the accident.

Conductor Austin did not forget or overlook the order, but he failed definitely to ascertain that the opposing train had not arrived at the meeting-point before the caboose of their train had reached a point near the north end of the siding. Had he been more alert and attentive to his duties he would have made an effort long before he did to ascertain whether train No. 143 was at the meeting point, and he could then have stopped his train probably in time to avert the collision.

Conductor Austin also failed to comply with the rules which require that when practicable conductors must show train orders to trainmen. He had an opportunity to show the train orders received at Russellville to Brakeman Cox, but did not do so although he informed him as to the requirements of train order No. 81, he had no opportunity to show them to Brakeman Russell. Whether or not by doing so would have prevented the accident is problematical as these brakemen were aware that train No. 143 was to be met yet both of them failed to ascertain at what point.

Fireman Cole admitted that he also overlooked the meet order because of the trouble which he had with steam and fire. Neither Head Brakeman Cox nor Middle Brakeman Russell had seen the train orders received at Russellville although both of them knew that the rules require that brakemen must read train orders. Brakeman Cox, however, was informed by the conductor that they were to meet train No. 143 at Knoxville. He said he remembered the meet after departing from Russellville, but forgot the location, and as no meeting-point whistle signal was sounded approaching Knoxville, he thought it must be at some other place. While Brakeman Russell did not see the meet order he was thoroughly familiar with the schedule of train No. 143 and was aware that it was about due in the vicinity of Knoxville at the time his own train approached that point, yet he made no attempt to learn at what point the trains would meet, but assumed it would be at Knoxville Junction. Had these employees made an effort to ascertain as to where the meet was to take place this accident probably would have been prevented.

At the time of the accident, Fireman Cole had been on duty 8 hours after having been off duty since October 17; this was his first trip on the Central Division during October. The other employees involved were experienced men and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND

Director.